

Pre-Installation Compatibility Assessment.

The applicant, distributor, or installer (i.e., the party conducting the pre-installation compatibility assessment) must be able to demonstrate, to the satisfaction of the Executive Officer, that a candidate engine being considered for retrofit is compatible with the verified diesel emission control strategy.

(1) For diesel emission control strategies that have exhaust gas temperature requirements for successful operation, the applicant, distributor, or installer (i.e., the party conducting the pre-installation compatibility assessment) must measure and record the exhaust gas temperature for each candidate engine to determine if the temperature requirements are satisfied. In lieu of logging data for each candidate engine, the applicant may choose to data-log a representative number of candidate engines, provided the following requirements are met:

(A) The diesel emission control strategy is verified to reduce emissions of diesel particulate matter only,

(B) At least 5 representative engines must be data-logged from within each group of similar engines, or 10 percent of each group, whichever is larger. All engines in a group of 5 or fewer engines must be data-logged. Data from engines outside the group cannot be used to support retrofit of engines within the group. A group of engines is similar if:

1. All engines belong to the same common ownership fleet.
2. All engines have the same make and model.
3. All engines are certified to the same PM emissions standard.
4. The maximum power ratings of all engines fall within a range that does not exceed 100 horsepower. For example, all engines are rated to between 250 and 350 horsepower.
5. None of the engines have exhaust gas recirculation, or all of the engines have external exhaust gas recirculation, or all of the engines have internal exhaust gas recirculation.
6. All engines are installed in similar vehicles or equipment that perform a like function and have similar duty cycles. Examples of vehicle or equipment groups considered similar include solid waste collection vehicles, transit buses, class 8 tractors, excavators, wheel loaders, and back-up emergency generators.

(C) If the diesel emission control strategy is determined to be compatible with the candidate engine in its current application, the applicant, distributor, or installer (i.e., the party conducting the pre-installation compatibility assessment) must provide a written statement to the end 52

user no later than the date of installation and, upon request, to the Executive Officer within 30 calendar days of the request, that includes:

1. A statement that the exhaust gas temperature profile of the candidate engine was found to satisfy the requirements of the diesel emission control strategy's Executive Order,
2. The date of this determination,
3. The name and contact information of the owner of the common ownership fleet,
4. The Executive Order number and the diesel emission control strategy family name,
5. The engine family name, engine make and model, and power rating of each candidate engine along with a unique identifier such as a vehicle identification number or an engine serial number,
6. A description of the vehicle or equipment type for each candidate engine,
7. Identification of which candidate engines were data-logged and the groups they represent,
8. Identification of the parameters used to define each group of similar engines, and
9. The name of the installer and the date of installation, if applicable.

(D) In cases where representative sampling is selected, the party conducting the pre-installation compatibility assessment is still responsible for ensuring that all diesel emission control strategy installs comply with all the terms and conditions of the Executive Order.

(2) Data must be measured and recorded using a stand-alone data logging system that is independent of the diesel emission control strategy and must adhere to the following criteria:

(A) The measured and recorded data must be representative of the actual duty cycle and operation of the candidate engine as best it can be anticipated at the time.

(B) The exhaust gas temperature of the candidate engine must be measured at a point in the exhaust system that is within 6 inches of the proposed location of the inlet of the diesel emission control strategy.

(C) The recorded exhaust gas temperature must have an accuracy of at least ± 4 degrees Celsius. The temperature sensor must have a range sufficient to accommodate the highest exhaust gas temperature measured plus 10 percent without exceeding the sensor's full scale rating while ensuring that 90 percent of the measured values fall between 10 and 90 percent of the sensor's full scale rating.

(D) The exhaust gas temperature of the candidate engine must be measured and recorded for a period that is long enough to determine the exhaust gas temperature profile associated with the candidate engine's duty cycle, but not less than 24 hours of representative, actual engine run time. The data logging strategy must include a means to accurately determine when the engine is actually running. This may include use of a data logging system that starts automatically when the 53

engine starts and stops automatically when the engine stops, or a means to identify and remove data that correspond to the engine being off such as by simultaneously logging data from an engine RPM sensor or applying a temperature threshold that corresponds to a temperature just below the idle temperature of the engine.

(E) The memory of the data logging system must be of sufficient size to ensure that data are not overwritten prior to retrieval.

(F) All data must be recorded at a frequency of at least once every 5 seconds (0.2 Hertz)

(G) At a minimum, the following parameters must be measured and recorded:

1. Exhaust gas temperature in degrees Celsius
2. Time and date for each data point
3. Other parameters deemed necessary by the Executive Officer to meet the terms and conditions of the Executive Order.

(3) At the Executive Officer's request, the applicant must submit all data used to determine the suitability of a candidate engine with a verified diesel emission control strategy. All logged data must be submitted electronically in Microsoft Excel or another format approved by the Executive Officer. The installer must keep a record of the data used to determine the suitability of the candidate engine for the duration of the warranty period of the diesel emission control strategy and make the data available to the applicant and the Executive Officer upon request. These data must include all logged data, the date of the determination, the name and contact information of the end user, the date of installation, the name and contact information of the installer, the Executive Order number, the diesel emission control strategy family name, and clearly identify the candidate engine and vehicle or equipment using a unique identifier such as a vehicle identification number and an engine serial number along with the engine family name.

(4) Prior to installation of a diesel emission control strategy, the installer must conduct a basic assessment of each candidate engine's state of maintenance to ensure that it is appropriate for use with the diesel emission control strategy. The installer must maintain a record of all documentation used to make the determination that the candidate engine was appropriate for use with the diesel emission control strategy. All such records maintained by the installer must be made available to the Executive Officer within thirty days upon written request. For this basic assessment, the installer must at a minimum do the following:

- (A) Review oil consumption and engine maintenance records if available,
- (B) Obtain a fuel sample from the fuel tank and visually inspect the sample for contamination,
- (C) Inspect the engine for signs of poor maintenance including oil leaks,
- (D) Inspect the tailpipe for signs of oil contamination, and
- (E) Inspect the exhaust plume for signs of high PM emissions and oil burning.